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Probison dehmi n. g. n. sp. a Recent Find of an Upper Sivalik Bovid

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Plate 16, Tab. 1

Zusammenfassung

Als *Probison dehmi* n. g. n. sp. wird ein Boviden-Schädel beschrieben. Er stammt von der Basis der Quranwala-Zone, eines Sandstein-Horizonts des unteren Tatrots, Upper Sivaliks (Fundpunkt: Masol, NO Chandigarh/Panjab).

Die Zuordnung zu einer neuen Gattung und Art erfolgt anhand vergleichend-morphologischer Untersuchungen und stratigraphischer Gesichtspunkte.

Zum Vergleich werden herangezogen die Gattungen: *Bison* Smith, *Leptobos* Rütimeyer, *Ovibos* Blainville, *Bootherium* Leidy, *Symbos* Osgood, *Liops* Gidley und die Arten: *Bison sivalensis* Lydekker, *Leptobos falconeri* Pilgrim, *Ovibos moschatus* Allen.

Der Schädel kommt dem des *Bison sivalensis* Lydekker am nächsten, unterscheidet sich aber in folgendem: Das Gehörn krümmt sich nach vorwärts-unten, bei *B. sivalensis* nach rückwärts-außen. Das Parietale ist länger, die Aufwölbung zwischen dem Gehörn geringer, das Occipitale breit, die Bulla tympanica kleiner.

Aufgrund seiner Beziehungen und Unterschiede zu *Bison sivalensis,* der aus dem wesentlich jüngeren Pinjaur, Upper Sivaliks, bekannt ist, sehen die Autoren in *Probison dehmi* einen möglichen Vorfahren des *Bison sivalensis* Lydekker.

Introduction

The Upper Sivalik sandstones are generally soft and contain calcareous concretions which after waethering are either left on the flat surface of the exposures or are transported to varying distances depending upon the prevailing slopes. The Upper Sivalik fossils are mostly found in such concretions. This skull was also lying on a gently sloping surface of a lower sandstone bed in the fossiliferous zone of the Tatrots.

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Bovidae

Bovinae

Probison dehmi n. g. n. sp.

Derivatio nominis: in honour of Prof. Dr. R. Dehm, Munich.

Diagnosis: The skull is very similar to that of *Bison sivalensis* Lydekker but differs from the latter in possessing less reduced parietals, supraoccipital less deflected towards the occipital plane, the frontals being less arched between the horn-cores and smaller tympanic bullae.

Locality: 1/2 mile east of Masol village, 7 miles north-east of Chandigarh.

Horizon: Upper Sivaliks, Tatrot stage (basal bed of Quranwala zone); collected by Ehsanullah Khan.

Deposition: Dept. of Geology, Panjab University, Chandigarh/India Nr. B/7.

Description: The skull is well preserved except for the muzzle and the tip of the left horn-core. The right horn-core is missing.

Cranium. The length of the skull is nearly twice its width which falls at the orbits; it narrows down abruptly anterior to the orbits.

Orbits. The orbits are large and out of the profile of the face; cross-sections are approximately circular, the maximum diameter being 65 mm anterior-posteriorly.

Nasals. The nasals are long, slender and extend to the anterior of the orbits. The fronto-nasal suture is not clearly traceable.

Lachrymals. The lachrymals are narrow, without larmier, short and pointed to meet the nasals anteriorly.

Frontals. The frontals are long and broad; slightly arched posteriorly; swollen between the horn-cores, but not so prominent as in *Bison sivalensis* Lydekker. The supraorbital pits are situated behind the orbits and are duplicated; shallow and broad farrows run anteriorly from the pits. Prominent ethmoid vacuities are present.

Horn-cores. The horn-cores with prominent ribs are far apart, curve downward and forward, compressed anterior-posteriorly and have an oblong cross-section, the maximum diameter being nearly 1 1/2 that of the minimum; the left horn-core shows a slight posterior-anterior twist.

Parietals. The parietals are short and broad; form the upper surface of the brain case and slope towards the occiput; their length is 1/4th of the frontals. The fronto-parietal suture is as in *Bison;* the parieto-supraoccipital suture is slightly elevated; the temporal crests are prominent; the temporal fossae are shallow.

Squamosals. The squamosals are long, broad posteriorly and narrow anteriorly.

Occiput. The suproccipital is deflected towards the occipital plane; the occipital condyles are prominent with deep valleys between the condyles and processes; the occiput is semicircular. The basioccipital is flat; the prominent posterior tuberosities expand laterally and the anterior ones anterior-posteriorly; the keel is weak. The tympanic bullae are small.

Palates. The palates appear to extend to the second molars anteriorly and not too far behind the last molars as in *Bison sivalensis* LYDEKKER; they are not in contact with vomer.

Maxillae. The maxillae between the molar series are flat, broad posteriorly and narrow anteriorly; the inferior lateral sides are parallel to each other and the superior regions narrow upward to meet the nasals.

Teeth. The teeth are rugose; the molars are square or slightly broader than long; a small spur projects into fossettes of M^{2-3} and is absent in M^1; the median pillars are prominent and mesostyles are well developed. The buccal sides of the lobes are convex.

Remarks: The skull under review agrees more or less with that of *Bison sivalensis* LYDEKKER in the following characters: 1. Breadth of frontals between orbits greater than their length; 2. form of lachrymals (short, narrow and pointed anteriorly); 3. much reduction of parietals; 4. flatness of basioccipital; 5. small extention of palates behind molar series; 6. external auditory meatus opens forward; 7. horn-cores far apart with swelling between them; 8. tuberosities are prominant.

The skull differs from *Bison sivalensis* LYDEKKER in the following characters: 1. Horn-cores curve downward and forward, while they curve backward and outward in *Bison sivalensis;* 2. parietals are $^1/_4$th of frontals than $^1/_6$th; 3. swelling between horn-cores is not very prominent; 4. occipital is broad and shallow.

The skull agrees, more or less, with *Leptobos falconeri* PILGRIM in the following characters: 1. Deflection of supraoccipital towards occipital plane; 2. weak occipital vrest; 3. shallow temporal fossae; 4. broadness of temporal fossae at their posterior ends; 5. less reduced parietals.

The skull differs with *Leptobos falconeri* PILGRIM in the followings: 1. Swelling between horn-cores; 2. less extention of palates behind molar series; 3. flatness of basioccipital; 4. much reduction of parietals; 5. broadness of cranium.

The skull, more or less, agrees with *Ovibos moschatus* ALLEN (female) in the followings: 1. Horn-cores curve downward and forward; cranium in the anterior region is narrow; 3. orbits are much out of profile of the face; 4. palates are less produced behind the molars; 5. tympanic bullae are small.

The skull differs from *Ovibos moschatus* ALLEN (female) in the followings: 1. Buccal sides of lobes in the teeth are convex not nearly flat as in *Ovibos;* 2. parietals are less reduced; 3. supraoccipital not compelety deflected towards occipital plane; 4. lack of accessory occipital condyles; 5. pro-

minent tuberosities not weak as in *Ovibos;* 6. mustoids take prominent part in occiput not less as in *Ovibos.*

The skull d i f f e r s from *Bootherium* LEIDY in the followings: 1. Larger in size; 2. basioccipital and basisphenoid are not in the same plane with prominent tuberosities; 3. presence of deep valley between condyles and occipital processes; 4. presence of shallow temporal fossae; 5. lachrymal fossae not very distinct.

The skull d i f f e r s from *Symbos* OSGOOD and *Liops* GIDLEY in general form and in absence of roughness in the parietal region by exostosis.

Having the above comparative study in view, it is quite clear that greater similarities exist between the present specimen and *Bison sivalensis,* but the difference between their characters is a qualitative one and does not fall within the limit of the individual variations, therefore, the authors like to assign it a new genus and species, *Probison dehmi.* Moreover, it is also to be noted that the present specimen comes from an old horizon, the Tatrots, while *Bison sivalensis* has been reported from the Pinjaurs, therefore, it is justified to state that *Probison dehmi* may be the ancestor of *Bison sivalensis* LYDEKKER.

Tab. 1: Comparision of the skull of *Probison dehmi* n. g. n. sp. with other Bovidae

	Leptobos falconeri PILGRIM 1939 p. 308	*Bison sivalensis* LYDEKKER 1878 p. 125	*Ovibos moschatus* ♀ ALLEN 1912 p. 126	*Probison dehmi* n. g. n. sp. B/7
	mm	mm	mm	mm
Distance from fronto-nasal to fronto-parietal sutures	144	—	165	170
Distance from fronto-parietal suture to summit of occipital crest	94	—	60	70
Length of temporal fossae	146	130 (5.2")	155	160
Breadth of skull at orbits	223	238 (9.5")	200	226
Breadth of skull at mastoid	202	—	175	230
Height of occipital from base of condyles to summit of occipital crest	125	120 (4.8")	125	125
Width of face in front of orbits	161	—	140	142
Width of palates at M^3	76	84 (3.4")	66	83
Interval between ends of temporal fossae	50	? 100 (4.0")	70	90
Length of upper molar-premolar series	147	—	110	150

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Plate 16

Probison dehmi n. g. n. sp.

1—4 views of the skull:

1. occipital view
2. dorsal view
3. palatal view
4. lateral view
5. upper dentition p^2—m^3, crown view